

OF THE

- American Ironworks Company**, formation of, 597
Actions against coalowners, 86
Alderley Edge Mining Co., meetings, 153, 776; J. Osborne, 163
Alloy, a new, Mr. H. Micolon, 385
Alexandria Mining Company, meeting, 255
Alexandra Park Company, the progress of, 235
Aluminium, the economic treatment of, N. Bassett, 706, 784
Amalgamators, improved, Mr. Ferrand, 339; C. Camp, 590
Amber, Mr. Bandrimont on, 517
America, mines and minerals of—the lead mines of Maine, C. B.
—copper mines of W. Adams, 731 [Richardson, 337]
—coal, tariff, and taxation, T. Butler, 622
—School of Mines, the progress of, 855
—Tin Mining Company, formation of, 908
Anglo-Saxon United Tin Mining and Smelting Co., formation, 404
Anglo-Brazilian Gold Company, meetings, 452, 472
Anthracite as a locomotive fuel, 720
Antimony, regulus of, H. Hughes' method of obtaining, 608
Armour-plant for the Russian Government, 280
Artificial wells, machinery used in boring of, W. Mather, 767
Ashton Vale Iron Company, formation of, 328, 332
Atlantic telegraph cable, Glass, Elliot, and Co., 234
Auriferous ores, the treatment of, A. Francis, 20; 710
Aureliahaum of the ancients—Munsta's Metal, J. Bruce, 790
Australia, monthly summary, mines, 747, 807, 810, 142,
213, 287, 382, 466, 508, 590, 658, 701, 807, 875
gold mining in, 38, 115, 171; quartz mining machinery in, 874,
Australian Mining Company, meeting, 440 [890]
copper mining reports, 790
Avonside Engine Company, formation of, 204
Baldwin (Isle of Man) Mining Company, meeting, 765
Barlota process of treating ore in Colorado, 179
Barris Tin Mines—mining in Spain, N. Ennor, 19; A. Strachan,
56; meetings, 52, 196, 678, 711, 812, 860
Basin, process, Dr. Carey on the, 230; E. Mushet, 290
Bedou-Air Mining Company, formation of, 348; meeting, 419
Belgium, metallurgical industry in, 646
Billins Lead Mining Company, meeting, 749
Binzer Downs Mine, the re-working of, 612
Birch Tor Mine, J. Lean, 454 [price of, 750]
Blasphalt, a new method of obtaining, Mr. Balard, 990; the high
Bituminous substances, improvements in the distillation of, J.
Saunders
Black lead, discovery of in Australia, 53; the formation of, 643
Blasting by electricity, 178; the various methods of, 701
Blast-engine, a new, H. C. Coulthard, 263
Blast-furnace cinders, the utilization of, A. L. Fleury, 279; 306,
—the Raschette, W. Raschette, 516 [726, 742]
—slag, the utilization of, G. Barry, 833
Blithman Mine, negotiations for the purchase of, 299, 312
Board of Trade returns, 9, 10, 155, 157, 188, 191, 263, 828, 331,
405, 406, 478, 478, 564, 567, 629, 631, 697, 698, 781, 782
Bohemian, coal mining in, 19
Bolivia, cast-iron, 420
Boscowen Mining Company, meetings, 343, 640
Bonelli's Electric Telegraph Company, formation of, 225
Bolivia and its resources, 358; mining survey of, 382
Bolivian Government, negotiation in relation to, 305
Born Accord Copper Mining Co., meetings, 153, 497; resuscitation
Botallack Mining Company, meeting, 153 [of, 328]
Botole Mining Company, meeting, 681
Boring and mining apparatus, Munroe and Scott, 104; Hawks,
Crawshaw, and Sons, 249; Mr. Crease, 325, 558, 667, 726, 822,
874; Mather and Platt, 538; J. B. Wilkin, 658, 690; J. B.
Armistage, 674, 742; G. Green, 710, 742, 800, 822, 839; II. G.
Williams, 742; W. G. Gard, 874; and ventilation combined,
Hicks, nature and uses of, Bodmer, 767 [891]
"Brindley, James, and the Early Engineers," S. Smith, 870
"Broker's advice"—the Grylls district, E. Cooke, 127
Bryntal Lead Mining Company, meeting, 183
Bryn Gwlog Mining Company, meeting, 876
Brazil, mining explorations in, W. Reay, jun., 106
Brooklyn United Mining Company, meeting, 72
Breakwater at St. Ives, erection of the, 647
British and foreign news, articles from, J. A. D. Heldmann, 18, 127,
169; J. Trevellick, 34, 146, 182; 638
—Columbia, its mineral resources, 43
—Copper Company, formation of, 188, 204
—State Company, the progress of, 296, 329; meeting, 623
—Army and Navy Review, 506
—and Foreign Railway Plant Company, meeting, 540
—and Foreign Mineral Financial Association, 781
—Associated for the Advancement of Science—meeting of at
Bath, 687; E. Hopkin's in the Inaugural Address, 674
Buddha, interesting copper casting of, 736 [E. Davies, 592]
Caezwernog Gold Mining Company, formation of, 406, 497, 664;
Caedryn Slate Quarry Company, formation of, 457
Caloric engine, a new, Mr. Roper, 460
Cam Camborne, plan of, T. E. W. Thomas, 378
Canada East, copper mining in, 233
Canadian Mining Association, formation of, 699
Calderbank Pella Consolidated Lead and Copper Co., formation, 883
Cariboo, British Columbia, the gold diggings of, M. Babey, 363
Carmarthenshire mining district—See Talbach Mine
Cardiganshire copper mines and smelting works, progress of, 637
Caradoc Consols Mining Company, meeting, 707
Cardiganshire, report of mining in, 792
Cardiff, the port and the Aberdare coal fields, A. Bassett, 767
Cape Copper Mining Company, meeting, 72, 692
Cassell Coal Consolidated Tin and Copper Mining Company,
formation of, the, 70, 169, 177
Capula Silver Mining Company, meeting, 77
California, mining profits in, 108
Carnarvon Mines and Railway Company, meeting, 297
Carnooloche, the projection of, 132
Cardinal Wheel Ross River-Lead Mining Co., formation of, 513
Carters Valley Mining Company, formation of, 301
Carleton and Phoenix Consols Mining Company, meeting, 277
Castling in America, an immense, 257, 427
Cast-iron pit tubbing, J. Gibson, 427
—manufacturer of articles from, N. McIlhenny, 734
Cast-steel, the invention of, 895
Castle Can Dochan Mining Company, meetings, 513, 523; 796;
"Cautious Man"—Penden Consols, 4, 147, 163; reply to "Rash
Man," C. B. Jones, 71, 87, 107; East Welsh Grey-
Wille and North Downs, 127
Central American Mining Company, meetings, 308, 892
—Grylla Mining Company, formation of, 70; H. Rhodes, 87
—Railway Company of Venezuela, formation of, 513
—Southbeach Mining Company, increase of capital of, 597
Chain cables, on the testing of, F. A. Paget, 323
Charcoal, carbonized peat, in the manufacture of iron, 182
Chatham Mining and Smelting Co., formation of, 629, 697
Child, mines and mining in, Wm. P. Harris, 34; mineral wealth
China, mines and mining in, 11 [of, 783]
Chiverton Valley Mining Company, formation of, 153
—Mining Company, meetings, 313, 590, 791
Christmas effusion, A. James Crofts, 891
Chlorine, the manufacture of, M. De Tremaglan, 655
Clarence Hotel Company, formation of, 261
Clare, J., and the Admiralty, 349; has he any claim on Govern-
ment? 533
Clay rocks of Wales, the, 106 [meant? 533]
Cleveland Iron Company, formation of, 169, 188
Clifford Amalgamated Mining Company, meeting, 457; thermal
waters of, Profs. Smyth and Miller, 711
Coal—Welsh or North Country, Mr. Doubleday, 11; 95, 182;
mining in Bohemia, W. S. Harris, 19 [444, 774, 831]
—mining at the Antipodes, 39
—mining in Northumberland and Durham, 34 [51]
—getting, an improved method of, Burton, Rhodes, and Seaton,
question in France, the, 59; mining in, 31, 426; exports
the Brazilian, 70; N. Plant, 78, 272, 428, 431 [to, 881]
—product of America, 70
—cutting machines, 79; the West Adelaide Company, &c.,
313; 398, 538, 558, 590, 606, 622; recent patents, 391;
S. Firih, 398; R. Ridley, 408, 490, 574, 590, 606, 622; J. A.
D. Heldmann, 418; Locke & Co., 424; J. Rothery, 434;
443; Firih & Ridley, 479; Phillips and Dees, 500, 522;
patents, 538, 558; in Northumberland and Durham, 547;
574; practical application of, at the High Roy Colliery,
583; J. G. Jones, 584; 658, 766; Mr. Burdon, 668; Mr.
Nelson, 683; Mr. Farrer, 783; E. Levick, 790; G. Lam-
bert on, 81, 115, 171; quartz mining machinery in, 874,
trade of New South Wales, 104; fields of, 292
—in the Imperial French Navy, 115, 134
—traffic on railways, 155
—on the deposition of, J. Curry, 190
—export trade of the United Kingdom, 229
—in the Mont Cenla Tunnel, 248
—experiments on the several kinds of Indian, 278
and iron in Scotland, 312; in Russia, R. Flint, 306
—the best steam, for the Navy, 319
—exports to Prussia, 359, 664; mining in Prussia, 516
—in Nevada, 390
—on the waste of, P. L. Simmonds, 392
—trade, the foreign, 407, 782 [Wall, 871]
—the utilisation of small, Baylet and Vigoulette, 427; A.
traffe to London by railway, 411
—discovery of, at Sudbury, 516
—trade, a French view of the English, 458
—slack washing machine, J. Francis, 459
—North Country, Scotch, and Lancashire, 470
—the effects of certain geological arrangements on the working
of, P. Cooper, 499
—mining in Spain—the Credit Mobilier, 500
—trade of London, 513
—mining in Lancashire, H. H. Wyne, 516
—trade in Australia, 528; enormous deposit in Victoria, 648
—substitutes for—steam fuel, 632
—mining in France, 533; trade in France, 664
—in China, 549
—where the Confederates get their, 565
—yield in South Staffordshire, R. Kettle's paper on, 568
—and iron in Scotland, W. Moore's paper on, 580
—mining in Belgium, 585
—and iron exports to the United States, 595
—fields, extent and duration of the, H. D. Rogers, 606
—discovery of in Brazil—the Candioti coal field, 618
—trade, the London railway, 631
—large increase in the export of, 698
—field, the Somersetshire, Greenwell and M'Murtre, 720
—how it may have been formed, Sir C. Lyell, 736
—the economic value of different kinds of, 748
—supplying Spain with—fuel in Madrid, 800
—trade in America—emigration, T. Gemmell, 806
—treating of, for its products, J. P. Baeburn, 823
—and its origin, Prof. Morris, 862
—steam, the Admiralty list, 874
—

SUPPLEMENT TO THE MINING JOURNAL.

CORNISH MINING—DOLCOATH MINE—No. 1.

HISTORY OF THE MINE.—When mining operations first commenced at Dolcoath no one can say; and they would appear to date, to use a common phrase, from time immemorial. The mine is indeed one of the most ancient known. Its name seems old enough to have been current from the days of the Phœnician traffic; but the mine can hardly have been of much importance before the commencement of the last century. After that period, however, its resources must have been developed with great rapidity, for Dr. Borlase includes Dolcoath in a list of mines which he enumerates as having turned out the greatest profit between the years 1718 and 1758. It is considered that what may be called the present working has been carried on for some 100 years, during which ores to the unprecedented value of 5,500,000, have been raised, an amount of produce averaging over 1000*l.* a week throughout the continuance of the operations. These figures are exclusive of the former returns, of which no accounts are extant. From about 1778 to 1799 the working was discontinued; but since the latter year, in which the existing company was formed, there has been no cessation of operations up to the present time, nor does the remotest likelihood now appear that any will take place, the prospects of the mine never being more favourable. In 1778 a depth of 185 fathoms from the surface (or 150 from the adit level, from which at Dolcoath and many other mines the depth is calculated) had been reached; and from the resumption of operations until 1836 the workings were carried further downwards 55 fathoms, to the 210 level. In the interim the mine was wrought for copper, and that most successfully, the ores from Dolcoath in 1815 producing the largest amount of money of any adventure in Cornwall—£5,591. Indeed, at one time the returns were 13,000*l.*, 14,000*l.*, and 15,000*l.* per month, and the profits 5000*l.* to 7000*l.* It may seem strange that a concern which fifty years ago was the most profitable copper mine in Cornwall should now be the most extensive tin mine; but the circumstances under which this transformation was developed are yet stranger. As the workings were carried downward to the 210 fathom level the mine gradually became less productive in copper, and the appearances in the bottoms unfavourable for that metal. The result was that in 1836 the water was allowed to rise to the level of the former operations. The other parts of the mine still produced copper; but in 1838 to the extent of 14,000*l.* only. The abandonment of the concern may be considered to have been imminent, had not Captain Charles Thomas, then one of the underground agents, the present manager of Dolcoath, and a gentleman well known and of high reputation in the mining districts of Cornwall and Devon, suggested that the mine should be worked deeper for tin. The proposition was considered by many experienced miners to be altogether fallacious. Working for tin below copper had never been heard of, much less attempted before; and when at length, with great difficulty, Capt. Thomas succeeded in inducing the adventurers to have the water pumped out of the bottoms of the mine, preliminary to putting his scheme into execution, many influential shareholders abandoned their shares rather than have anything to do with what they considered a mad enterprise. The water being drawn out, sinking below the 210 fathom level commenced in the autumn of 1849, and the result has been the fulfilment in the fullest sense of Capt. Thomas's predictions, in the present wonderful prosperity of the undertaking. Originally Dolcoath was divided into only 179 shares; but these having since been halved, the present number is 358. The undivided shares at one time sold as low as 10*l.* and 12*l.* The present shares—the halves—are now making 500*l.* to 520*l.*; so that what once could be bought for 10*l.* is now worth more than 1000*l.* There are several large shareholders, most of whom, it is said, came in cheap; and it has been noticed before the tin started and the price of the metal for the ore came down to the present very low figure, some of the proprietors were receiving in dividends nearly as much per month as the shares had originally cost them. Those who held on their shares throughout also highly benefited, the amount paid on each being 128*l.* 17*s.* 6*d.* against the present value above quoted; and the total dividend on each share 781*l.* 10*s.* These facts, like the circumstances of a similar character relative to the Devon Great Consols, formerly recounted, are very remarkable, as illustrative of the success of mining adventure. It should be further observed that Capt. Thomas may be considered not only to have made the fortune of his own mine, but to have been the benefactor of other mines in the vicinity; the success of the operations at Dolcoath having stimulated the shareholders in concerns which were failing for copper to push on for tin. Singularly enough, even the suspension of the operations in the lower levels of Dolcoath turned out in the end to be for the advantage of the shareholders; the price of tin being much lower when the sinking was stopped than when it was resumed. The mine still produces copper, but not to any important extent, the sales of that metal for September and October last being only 528*l.* 14*s.* 5*d.*, whilst the black tin raised in the same period fetched 10,000*l.* 13*s.* 2*d.* Formerly Dolcoath produced vitreous and ruby silver from what was known as the silver course, 3000*l.* worth of that metal being raised in 1810, and altogether about 7000*l.* worth obtained. Independently of silver-lead, silver ore has also been found in other Cornish mines; and it may likewise here be noticed that gold, but not in sufficient quantities to make independent working profitable, appears to have been of somewhat frequent occurrence in the stream works—more so in former years than now.

DESCRIPTION OF THE MINE.—The Dolcoath sett lies nearly equidistant between Camborne and Pool. It is nearly two-thirds of a mile in breadth and length, and is the property of Mr. John Francis Basset, of Tisbury, the representative of the late Lord de Dunstanville, who, in addition to receiving about 3000*l.* a year in dues from the mine, is one of its largest shareholders. As may well be imagined from the antiquity of the concern the workings are of the most extensive character. It is considered that there are no less than fifty miles of subterranean galleries. The lowest level is 278 fathoms below the adit, which in some places is 36 fathoms beneath the surface, though it is commonly reckoned to be 30. The deepest shaft—that known as the engine-shaft, or new sump—is being sunk yet further, and has reached about 4 fathoms below the 278 fathom level. From this it would appear that the extreme depth of the mine is 314 fathoms, or 1904 feet—over a third of a mile! Dolcoath is thus one of the deepest mines in England. As may be expected, such an extensive undertaking has many shafts: the principal are—Wheel Kilias, Wheel Bryant, Harriett's, Old Sump, Engine, New East, Valley, Old Dolcoath, Dinkin's, Garden, Bennett's, and Gossan. The four last named are not now in use. Of the others four are the principal drawing shafts; the two pumping engines are at Harriett's and Engine shaft; and the man-engine last at Wheel Bryant. The chief lodes worked upon are the Main, Caunter, Harriett's, South East, and North East. The main lode passes through the Carr River, Tincroft, Cook's Kitchen, West Stray Park, and Camborne Vein sets. It was found in Dolcoath to be rich in copper from the adit to the 160; from that point to the 200 it contained a mixture of tin and copper; but below the latter level it has yielded tin only.

Altogether thirteen lodes and branches have been worked upon more or less extensively; though the main lode has probably produced as much ore as all the others put together. Its general bearing is about 12° to the north of east, and south of west (magnetic); but the richest parts of the lodes are commonly east and west. The majority of them have produced principally copper; but they have not been worked to such an extent as to have reached the surface. It is anticipated that they would also be found to contain tin. In 1863, 1023 tons 8 cwt. 1 qr. 8 lbs. of black tin were sold, but of copper scarcely 3000*l.* The total returns for the year were 70,670*l.* 12*s.* 5*d.*, and the cost of copper scarcely 3000*l.* The profit thus being 17,481*l.* 10*s.* 18*d.* The cost had been increased by a large outlay on improvements and extensions; whilst the returns had been materially affected by the low price of tin, which is now 20*l.* per ton less than it once was. Otherwise the profit would have been much greater. The ground at Dolcoath is so hard that the driving costs on an average 20*l.* to 25*l.* per fathom, while it takes 50 tons of stuff to yield 1 ton of ore; and yet so extensive is the work pursued that a profit of over 1000*l.* a month is being made. In fact it has been stated upon authority that if half the number of hands were employed underground the concern would be worked at a loss. There are the following engines on the mine:—Two pumping engines 76-in. and 60-in. respectively; two stamping engines, 38 and 26-in.; one 19-in. working the man-engine, and five steam whips, two working full time and the rest occasionally. The whole of the stuff is drawn to the surface in kiddles, at an estimated cost of 1*s.* 1*d.* per ton.

Almost the entire of the surface of the sett at Dolcoath is either covered with the immense heaps of refuse, or otherwise made up of the mine, technically termed burrows; or appropriated to various buildings, and to the places in which the multifarious dressing and other operations are carried on. There are also a number of other mines immediately contiguous in full work; and in every direction the scene that meets the eye, although utterly devoid of the picturesque, is so full of activity and indicative of enterprise, as not only not to want interest, but to possess an attractiveness peculiarly its own.

At Dolcoath there is a man-engine, by which the men descend to, and ascend from, with the smallest possible amount of exertion, the 190 fathom level, or about 230 fathoms from the surface. This engine may be explained to consist of a series of wooden beams, bolted to each other longitudinally, and extending to the bottom of the shaft. To these, at intervals of two fathoms, platforms are attached, just large enough to afford standing room for one man. Other platforms are fixed, at similar intervals, on either side of the shaft. A steam-engine moves the compound beam—which works in ways—with its series of standing places, alternately up and down, the distance from one fixed platform to another. When the beam is up, the miner wishing to go down places himself on the topmost step of the engine, and is carried down to a level with the first platform in the shaft. He steps from the engine on to this. The beam again ascends, and its second step is brought up to the spot where he is standing. Upon the second step he now places himself, and, by the return action of the machine, is carried down to the next platform, two fathoms below his last stopping place, and four from the top. By repeating the process, alternately stepping on and off the engine, he gets to the bottom, with no more trouble than the necessity of watching the proper moment to pass from the fixed to the movable platform, and vice versa. There are 110 steps to the engine, which is capable of carrying 108 men up or down at one time, and the same time. Those who are going up step to one side of the shaft, those going down to the other; one party stepping on at the moment the others step off. There are two boys underground to balance the weight of the engine, which makes, on the average, 34 strokes a minute carrying the men up or down in 25 minutes or half an hour. Some of the miners, however, ascend with much greater speed, running up the ladders in the shaft to the next stage, and catching a higher step of the engine there, instead of waiting for the descent of that which was immediately above them. The man-engine is one of the greatest boons to the working miner that has ever been devised; none but those who have tried can tell how severe is the physical exertion of climbing several hundred feet of almost perpendicular ladders. In fact, but for the engine it would be almost impossible to work the lower levels of such a mine as Dolcoath. Between the termination of the man engine and the deepest level there are still, however, 88 fathoms (528 feet) of ladders, and it is intended to carry the engine down further, in order to relieve the men as far as possible. Man-engines were introduced first, not many years ago, at Treasvean; and the one at Dolcoath was erected in 1854. A few years since, a young lady courageously rode upon it to its termination—an undertaking requiring no little nerve, and not without danger. A portion of her apparel caught in the ways, but in obedience to the instructions of Capt. Basset, who accompanied her, she held firmly to the hold-fast, and was relieved from her somewhat perilous position by the tearing of her dress. Dolcoath exhibits the phenomena of hot and cold springs. In one of the lowest levels the writer found both, within a short distance of each other; and the water gives off a considerable quantity of steam as it is pumped up. Several years ago, Mr. Robert Fox found that the temperature of this mine increased at the rate of one degree with every 51 of descent. In some parts at the bottom the heat is considerable, and the men work all but naked. At places where a lode has been stopped away from level to level, and the men are working at different points in the huge cavities thus formed, the appearance of the mine is very strangely picturesque. The position of the men, unless near at hand, is only indicated by the light of their candles, which may be seen dotted

on the "darkness visible" like stars, fathoms above or below the spectator, as he stands in a central level opening into such a cavern, and peers into what, for all he can see to the contrary, may be illimitable space. Though sight may fail him, hearing, however, does not, and the rapid strokes of hammers, the sound of voices, or the singing of hymns, and even and anon the rumbling of the blasting—the concussion, perhaps, shaking the rock on which he stands—all help him to appreciate the extent and energy with which the underground operations are carried on. The miners at Dolcoath seem to be very fond of sacred music; and the writer, in ascending by the man-engine, after a few hours sojourn below, met a large number of them going to their eight hours' labour, singing as they went. Every circumstance combined to render the effect at once weird and exciting. Perhaps one of the strangest sights to be viewed in a mine is to be seen when a number of men are climbing up a long ladder against the side of the "gunnia," or worked out cavity. At a distance the lighted candles stuck in their hats alone are visible, and the curious spectacle is presented of a number of lights ascending in undulations, apparently self-moved and without support. A natural cavern or hollow place of any size is termed by miners a "wagh." It is from such spots that the finest specimens of crystals are obtained. An extraordinary "wagh" was discovered at Dolcoath in 1814, being about 120 ft. long, 18 ft. high, and varying from 4 to 9 feet in width.

[To be continued in next week's Journal.]

SALES OF COPPER ORES.

COPPER ORES SOLD AT THE CORNWALL TICKETINGS FOR THE QUARTER ENDING DECEMBER 31, 1864.

Mines.	Tons.	Amount.
Devon Great Consols	6429	£30,253 6 0
Clifford Amalgamated	4149	20,963 18 0
South Canadon	1429	14,785 8 0
West Saxon	1431	7,464 2 8
West Basset	1068	5,778 14 6
East Canadon	1437	6,134 4 6
Wheal Beton	1251	5,550 3 0
Marke Valley	1290	4,699 19 0
Fowey Consols	770	4,122 14 6
East Carn Brea	771	4,038 13 6
Phoenix	1183	3,651 17 0
Wheal Rose	750	3,371 13 0
Freser United	964	3,352 9 6
Hallenbeggie	570	2,348 13 6
Carn Brea	667	3,305 19 0
Wheal Basset	402	3,013 3 0
Devon and Cornwall	545	2,928 8 6
Craddock Moor	475	2,881 4 6
West Damsel	680	2,770 10 0
South Tolgus	502	2,513 14 0
Bedford United	570	2,503 13 6
Wheal Friendship	325	2,458 6 6
Rosewarne Consols	218	2,285 9 6
East Pool	670	2,163 17 6
Par Consols	365	1,973 9 6
Hington Down	481	1,875 1 6
Wheal Margery	429	1,777 17 0
Great North Downs	373	1,667 8 6
Bampfylde	157	1,647 12 6
Charlotte United	320	1,629 13 0
Great Wheal Busy	631	1,525 9 0
West Tolgus	224	1,479 8 0
West Canadon	285	1,468 3 0
East Rosewarne	163	1,436 12 6
North Trekeroy	350	1,402 16 6
Okel Tor	480	1,393 12 0
North Rosewarne	208	1,312 1 0
Rosewarne United	187	1,237 16 6
Great South Tolgus	164	1,163 1 6
New Wheal Martha	594	1,145 9 0
Levant	210	1,135 3 0
East Basset	175	1,099 3 6
Boscawen	295	1,082 14 6
South Crofty	280	1,062 5 6
Tywarhalls	333	1,069 0 0
Glasgow Canadon	319	1,003 0 0
Dolcoath	190	979 1 0
Brookwood	297	949 0 0
Copper Hill	233	909 13 6
Wheal Edward	247	893 9 6
Kelly Bray	197	870 19 6
West Fowey Consols	121	851 17 0
Cargill	60	783 6 0
Treloweth	160	775 6 0
East Russell	165	726 13 0
South France	124	676 15 0
Wheal Crebor	124	660 14 6
East Grenville	197	653 1 0
Tincroft	161	639 5 0
South Dolcoath	54	608 8 0
Tolcarne	172	575 4 6
North Robert	99	524 16 6
Grant Basset	82	528 6 0
East Basset	82	521 11 0
North Downs	81	469 0 0
New Rosewarne	69	462 0 0
Wheal Polmar	93	452 17 0
Nangles	102	443 15 6
North Crofty	95	430 12 6
Wheal Emma	172	424 9 0
Furdon	103	404 5 0
New Treleigh	136	398 6 0
Tolvadden	92	369 10 0
Wheal Grenville	35	361 7 6
North Granbler	51	324 9 0
Condarrow	63	318 14 0
Rotalack	44	305 8 0
Wheal Alfred	104	304 18 0
South Bedford	89	294 10 0
Gonamena	89	271 11 0
Lady Bertha	106	269 11 6
Yarner	100	262 10 0
Sortridge Consols	54	248 11 0
South Carn Brea	50	241 12 0
South Condarrow	80	237 10 0
New Cornish	87	232 12 6
Wheal Buller	86	225 11 0
West Stray Park	31	219 2 6
Grambler and St. Aubyn	30	212 17 0
Wheal Trannack	42	206 13 0
Molland	45	202 10 0
Carn Camborne	45	189 7 6
Hawknor	36	174 12 0
Wheal Ury	40	161 2 0
North Basset	40	155 0 0
East Florence	38	142 19 6
South Crintis	42	141 15 0
Treasvean	50	140 0 0
Wheal Anna	37	139 9 0
Providence	16	126 8 0
East Downs	24	125 8 0
Clamouth and Sperris	54	118 0 0
Wheal Yzmay	54	118 0 0
Champion's Ore	23	116 3 0
Rowdidden	9	115 5 0
Coliacombe	32	108 16 0
Wheal Curtis	32	105 8 0
East Trekeroy	10	91 15 0
Wheal Unity Consols	18	75 5 6
Great Tregone	7	69 12 6
East Wheal Tregone	16	69 8 0
West Alfred Consols	56	61 12 0
North France	14	58 9 0
West Trevelyan	9	58 5 6
Emily Henrietta	12	52 4 0
Alfred Consols	10	47 15 0
Great Wheal Alfred	13	42 5 6
Higgins's Ore	32	39 12 0
Camborne Vein	18	28 18 6
Creaghbrae	8	27 4 0
Rabey's Ore	2	18 12 0
Harvey's Ore	7	17 13 6
Crowan Consols	7	15 15 0
Bolling Well	10	13 3 0
Opie's Ore	1	11 4 0
Hilgan Mines	5	9 10 0
Camborne Consols	5	7 10 0
Pembroke	2	5 6 0

COMPANIES BY WHOM THE ORES WERE PURCHASED.

Vivian and Sons	6600	£37,288 15 5
Freeman and Co.	2870	14,169 2 3
Grenfell and Sons	4073	23,065 11 3
Sims, Williams, and Co.	4468	21,438 12 7
Williams, Foster, and Co.	7714	36,834 11 3
Mason and Elkington	3656	19,904 16 0
Bankart and Sons	2238	8,122 7 11
Copper Miners Company	2868	12,622 1 1
Charles Lambert	2960	10,625 10 6
Newton, Keates, and Co.	1110	5,900 2 6
Sweetland, Tuttle, and Co.	2397	6,107 9 6
Pencildw Copper Company	1368	7,236 4 9
Total	41,322	£203,245 5 0

FUEL.—An invention has been provisionally specified by Mr. John Milnes, of Gloucester, which consists in taking peat and mixing it with culm, slack, small coal, coal brush, or refuse of coal, which he prefers to be mixed in equal portions, and the same may, if required, be squeezed or pressed into compact masses or blocks, and will then be fit for use as fuel, and be much improved in quality. He can also mix peat with coal brash, and the earthy substance found with it, or with clay.

SALES OF COPPER ORES.

COPPER ORES SOLD AT THE SWANSEA TICKETINGS FOR THE QUARTER ENDING DECEMBER 31, 1864.

Mines.	BRITISH.	Tons.	Amount.
Berehaven	1740	£15,423	8 6
Regulus	87	1,694	7 6
Concorree	181	965	12 6
Ballycumshack	52	468	10 0
Cappagh	50	468	10 0
Copper Slag	118	367	2 6
Precipitate	3	147	0 0
Cobbing	18	108	13 0
Cronbane	40	77	13 0
London Ore	5	58	17 6
Irish	11	29	14 0
Tigrony	4	25	19 6
Total	2339	£20,042	7 0
COLONIAL.			
Cape Copper	867	£23,604	18 6
Kanmantoo	29	1,197	2 6
Concordia	63	1,152	16 0
New Cornwall	44	751	6 0
Gwalla	8	134	0 0
Australian	2	52	3 0
Newfoundland	2	27	11 0
Total	1015	£26,919	17 0
FOREIGN.			
Cobre	1167	£14,642	13 0
Chili Ore and Regulus	545	10,249	11 6
Cuba	527	7,870	9 6
Cuba Dust	109	1,299	16 6
Leghorn	113	824	18 0
Spanish	125	712	4 0
Victor Emmanuel	108	626	10 0
Var	31	513	16 6
Casali	41	387	9 0
Piedmontese	13	97	3 6
Total	2779	£37,224	11 6
RECAPITULATION.			
British	2339	£20,042	7 0
Colonial	1015	26,919	17 0
Foreign	2779	37,224	11 6
Regulus, Sludge, and Sundries	52	980	4 6
Total	6185	£85,167	0 0
COMPANIES BY WHOM THE ORES WERE PURCHASED.			
Copper Miners Company	498	£ 6,219	18 8
Freeman and Co.	437	7,173	17 0
Grenfell and Sons	939	12,801	19 0
Sims, Williams, and Co.	455	9,171	15 0
Vivian and Sons	1049	12,086	5 6
Williams, Porter, and Co.	1169	15,759	11 6
Mason and Elkington	368	5,867	0 1
Bankart and Sons	422	8,271	2 6
Charles Lambert	5	80	0 0
Sweetland, Tuttle, and Co.	357	3,344	19 10
Pencildw Copper Company	118	2,462	17 0
Mon Copper Company	185	2,260	5 0
Total	6185	£85,167	0 0

THE CLEVELAND IRON TRADE—ANNUAL REPORT.

In presenting our second annual report of the Cleveland Iron Trade, we would remark at the outset that our figures and observations on the trade of the year just closed must necessarily be of a less favourable character than they were a year ago. The iron trade is at this moment passing through a severe and trying ordeal—the natural result of overtrading and prolonged monetary pressure. There can, however, but be one opinion entertained as to the absolute genuineness of the iron trade of this district, and its ability to compete successfully with any other iron-making district in this country; but although so distinguished, still it is necessarily subject to fluctuations, and liable to the evils consequent on the undue expansion of trade and a disturbed currency. The year 1864 opened with stocks a little over 20,000 tons, and prices at their maximum; No. 1 standing at 64*s.*, the higher numbers being proportionately less. No change of any importance occurred till the middle of February, when a reduction of 2*s.* per ton was officially notified by the ironmasters; and then not until Scotch warrants had fallen 10*s.* per ton. Subsequently prices fell more rapidly, and before the end of July No. 1 had declined to 55*s.* nominally, but really to 53*s.* at which orders were freely taken, underselling being then a prominent feature of the trade. The establishment of a daily exchange at Middlesbrough, and the introduction of the Scotch system of warrants, opportunely interposed, and no further reduction at that time took place—indeed, so salutary was the operation of the warrant system, that an immediate advance of 2*s.* per ton was the result, and the benefit thus begun might have continued had not the rate of discount advanced from 7 per cent. to 8 per cent., which it did on Aug. 4, the announcement of which caused the market to open flat and prices to fall. On Sept. 3 another 1 per cent. was added to the Bank minimum, the effect of which was to produce speculation completely, and to render sales to any extent extremely difficult. Since then prices have gradually declined. It is true large transactions did take place during the prevalence of dear money, but only at prices favourable to the buyers, and generally for immediate delivery. Money is now comparatively cheap, and unless some favourable and unforeseen contingency arises to determine otherwise, we may confidently look for higher prices than at present rule.

The following may be considered the present average price of makers' iron—No. 1, 55*s.* per ton; No. 3, 48*s.*; No. 4, 46*s.*; and mottled and white, 45*s.* per ton, f